ORDER NO. GAD8511016C8

Service Manual

Radio

RF-1650J

(Black)

FM-MW-SW 3 Band Portable Receiver

This is the Service Manual for the following areas.

[Z]...For all European areas except United Kingdom, F.R. Germany, France, Italy and Finland.

[I]...For Italy and Finland.

[X]...For Asia, Latin America, Middle East and Africa areas.

■ SPECIFICATIONS

General:

Power Requirement:
- AC; [Z] [I] ..... 220 V, 50 Hz
- [X] ..... 110~127/220~240 V, 50/60 Hz
- Battery; [Z] [I] .... 6 V (Four "C" Size Flash light Batteries) (Panasonic UM-2 or equivalent)
- [X] ..... 6 V (Four "C" Size Flashlight Batteries) (National UM-2 or equivalent)

Power Consumption: 4 W (AC only)

Power Output:
- [Z] [I] ..... 1.2 W .... MPO
- 1 W ..... RMS (max.)
- [X] ..... 1.4 W....MPO
- 1.2 W....RMS (max.)

Speaker: 10 cm PM Dynamic Speaker (3Ω)

Output: Earphone/External Speaker; 3~8Ω/∅3.5

Dimensions: 266 mm (W)×143 mm (H)×81 mm (D)

Weight: 960 g without batteries

Radio Section:

Radio Frequency Range:
- [Z] [I] ..... FM; 87.5~108 MHz
- MW; 520~1610 kHz (577~186 m)
- SW; 5.9~18 MHz (50.8~16.7 m)
- [X] ..... FM; 88~108 MHz
- MW; 530~1605 kHz (566~187 m)
- SW; 5.9~18 MHz (50.8~16.7 m)

Intermediate Frequency: FM; 10.7 MHz
AM (MW/SW); 455 kHz

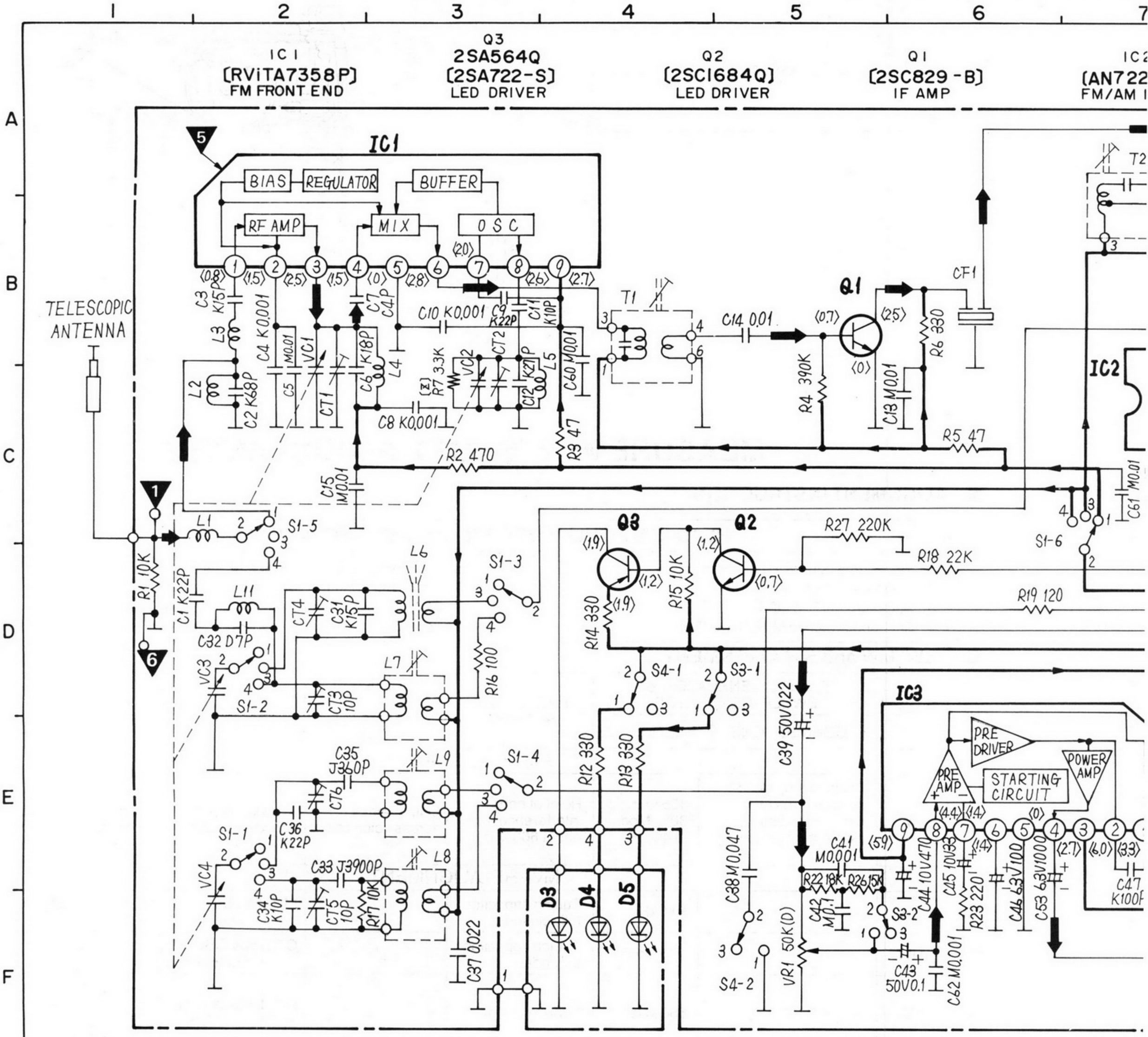
Sensitivity:
- FM; 2.8μV/50 mW output (−3 dB Limit Sens)
- MW; 89μV/m/50 mW output
- SW; 7μV/50 mW output

Design and specifications are subject to change without notice.

National / Panasonic

Matsushita Electric Trading Co., Ltd.
P.O. Box 288, Central Osaka Japan

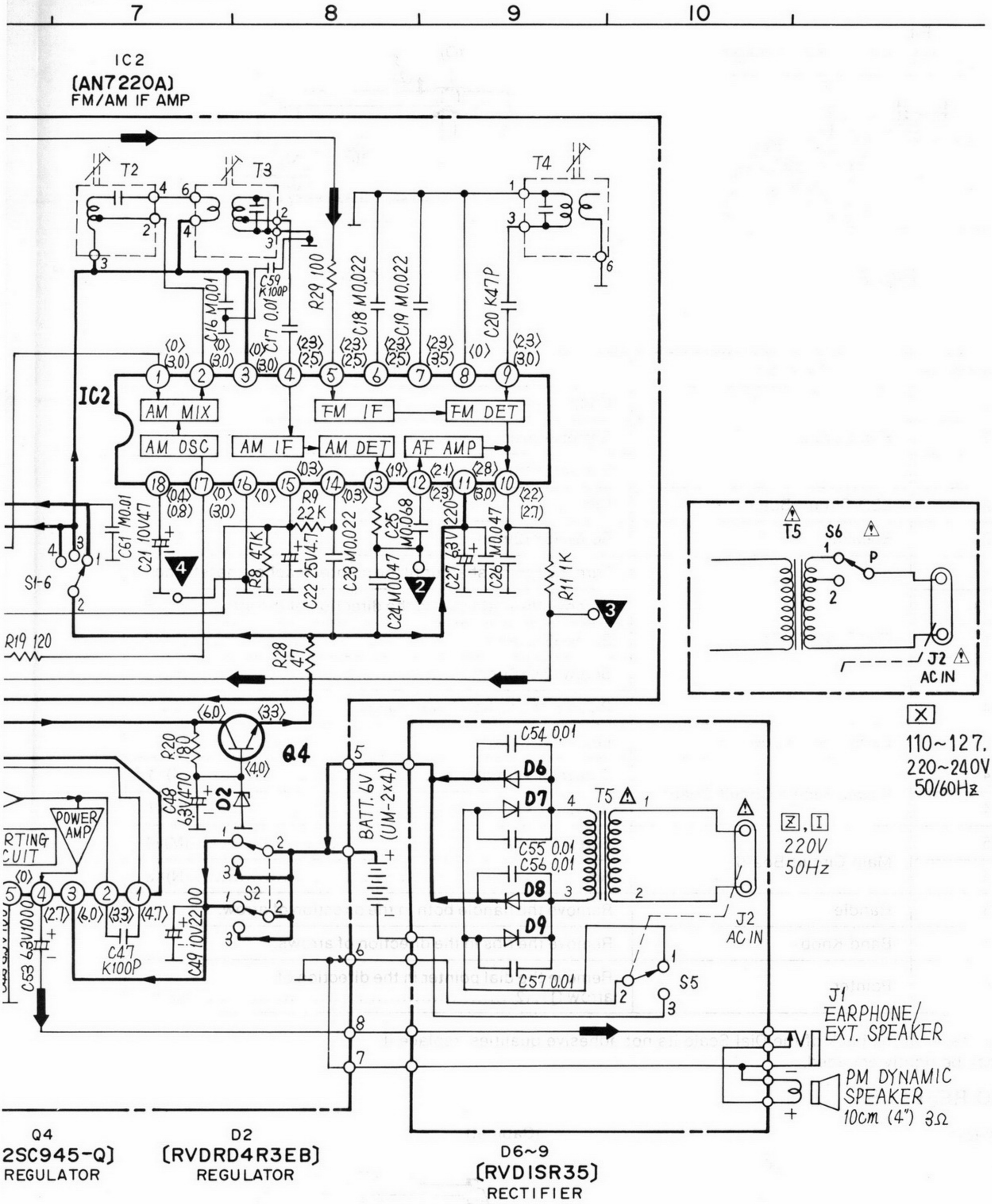
SCHEMATIC DIAG

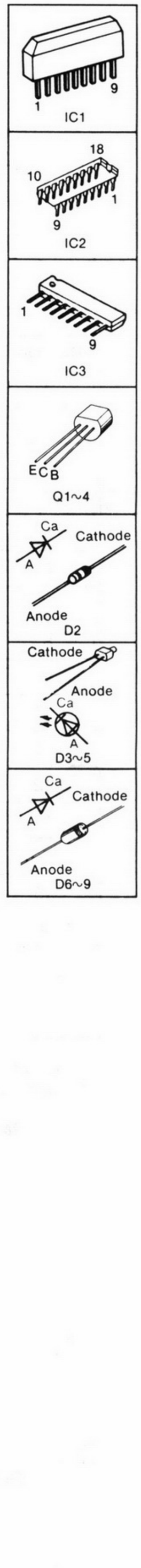


Notes:

1. S1-1~S1-6: Band switch in "FM" position. (1...FM, 3...MW, 4...SW)
2. S2-1, S2-2: Radio ON/OFF switch in "ON" position.
3. S3-1, S3-2: LOUDNESS ON/OFF switch in "OFF" position.
4. S4-1, S4-2: TONE HIGH/LOW switch in "HIGH" position.
5. S5: AC/DC IN select switch in "AC IN" position.
6. S6 [X]: Voltage Selector
7. VR1: Volume control.
8. The mark (▼) shows test point e.g. ▼1 = test point 1.
9. DC voltage measurement are taken with electronics voltmeter from negative terminal of battery.
   < >...FM position, ( )...AM position
10. Battery current: No signal 32mA
    Maximum output (radio) 290mA
11. Important safety notice
    Components identified by ⚠ mark have specia characteristics important for safety.
    When replacing any of these components, use manufacturer's specified parts.
12. Described in schematic diagram are two types the supply parts number and production parts transistors and dioes.
    One type number is uded for supply parts numl production parts number which they are identic
    [X]...For Asia, Latain America, Middle East and Africa
    [Z]...For all European areas except United Kingdom, France, Italy and Finland.
    [I]...For Italy and Finland.

IC DIAGRAM





nark have special
afety.
omponents, use only
.
m are two types of numbers;
roduction parts number for

upply parts number and
n they are identicial.
idle East and Africa areas.
t United Kingdom, F.R. Germany,

e.g. Q3
2SA564Q ——— Production parts number
[2SA722-S] ——— Supply parts number

* **The supply parts number is described alone in the replacement parts list.**

* **This schematic diagram may be modified at any time with the development of new technology.**

+B Voltage Line
Radio (FM) Signal Line

ORDER NO. GAD8610065C8

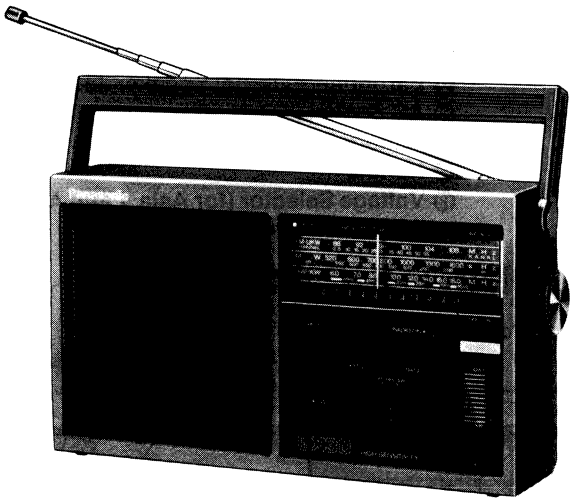
Service Manual

Radio

RF-1630J

(Black)

FM-MW-SW 3 Band Portable Receiver



This is the Service Manual for the following areas.

[Z]...For all European areas except United Kingdom, F.R. Germany, France, Italy and Finland

[X]...For Asia, Latin America, Middle East and Africa areas

[L]...For Australia

■ SPECIFICATIONS

General:

Power Requirement:	AC; [Z]...220 V, 50 Hz [X]...110~127/220~240 V, 50/60 Hz [L]...240 V, 50 Hz Battery; [Z]...6 V (Four "C" Size Flashlight Batteries) (Panasonic UM-2 or equivalent) [X] [L]...6 V (Four "C" Size Flashlight Batteries) (National UM-2 or equivalent)
Power Consumption:	4 W (AC only)
Power Output:	[Z]...1 W...RMS (max.) [X] [L]...1.2 W...MPO 1 W...RMS (max.)
Speaker:	8 cm PM Dynamic Speaker (3Ω)
Output:	Earphone/External Speaker; 3~8Ω/∅3.5
Dimensions:	246 mm (W)×131 mm (H)×79 mm (D)
Weight:	900 g without batteries

Radio Section:

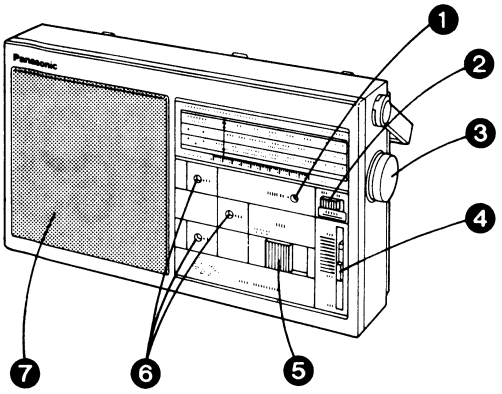
Radio Frequency Range:	[Z]...FM; 87.5~108 MHz MW; 520~1610 kHz (577~186 m) SW; 5.9~18 MHz (50.8~16.7 m) [X] [L]...FM; 88~108 MHz MW; 530~1605 kHz (566~187 m) SW; 5.9~18 MHz (50.8~16.7 m)
Intermediate Frequency:	FM; 10.7 MHz AM (MW/SW); 455 kHz
Sensitivity:	FM; 3.2 μV/50 mW output (−3 dB Limit Sens) MW; 80 μV/m/50 mW output SW; 13 μV/50 mW output

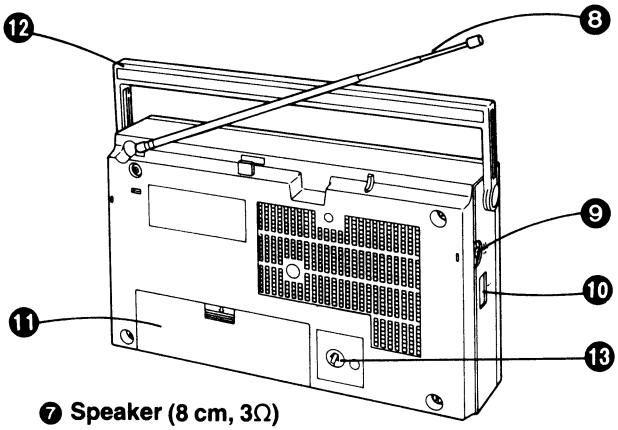
Design and specifications are subject to change without notice.

National / Panasonic

Matsushita Electric Trading Co., Ltd.
P.O. Box 288, Central Osaka Japan

LOCATION OF CONTROLS AND COMPONENTS





❶ Radio On Indicator (RADIO ON)
❷ Radio Switch (RADIO)
❸ Tuning Control (TUNING)
❹ Volume Control (VOL)
❺ Band Selector (BAND)
❻ Band Indicators

❼ Speaker (8 cm, 3Ω)
❽ Telescopic Antenna
❾ Earphone/External Speaker Jack (IMP 3–8Ω ⊂ ◁) ∅3.5
❿ AC Socket (AC IN ~)
⓫ Battery Compartment
⓬ Handle
⓭ Voltage Selector (for Asia, Latin America, Middle East and Africa areas.)

DISASSEMBLY INSTRUCTIONS

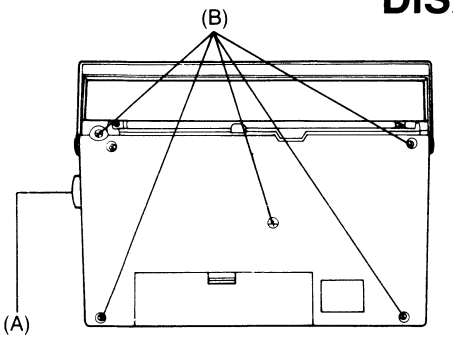


Fig. 1

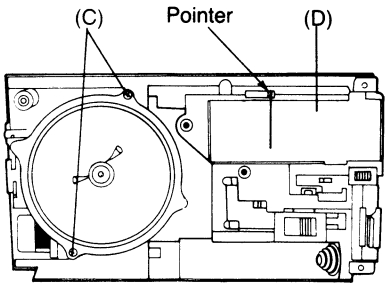


Fig. 2

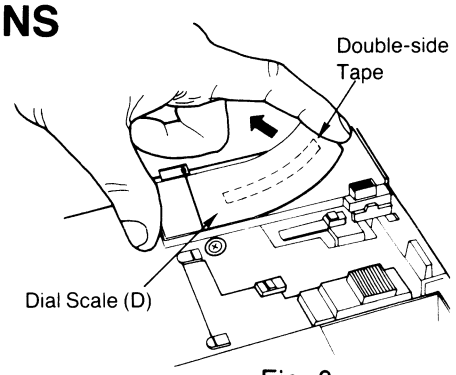


Fig. 3

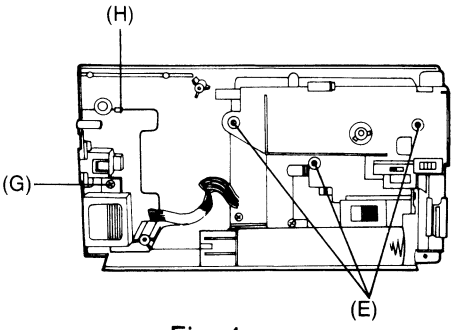


Fig. 4

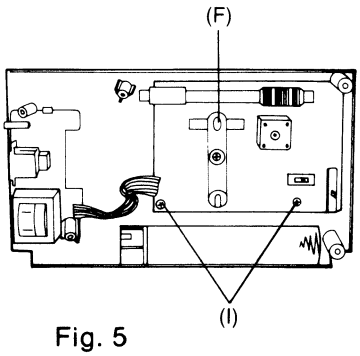


Fig. 5

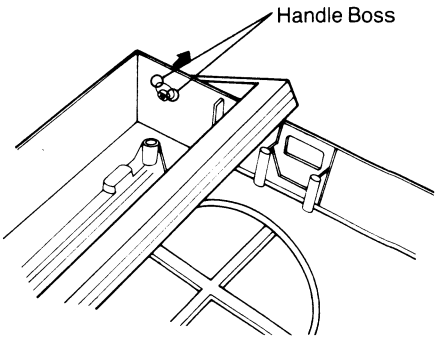


Fig. 6

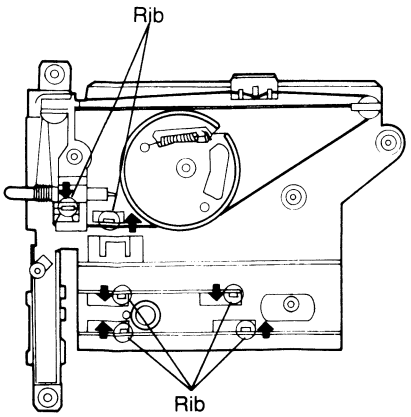


Fig. 7

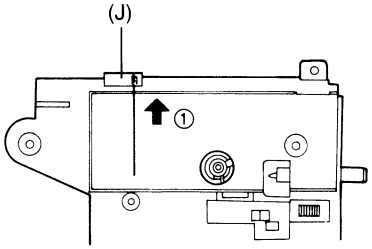
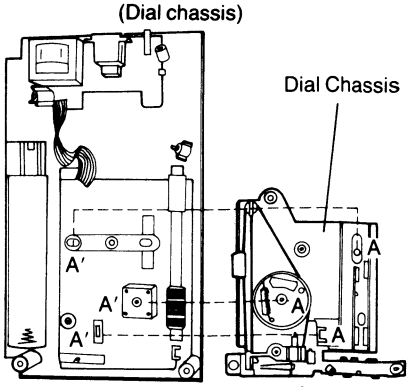


Fig. 8

■ HOW TO REPLACE



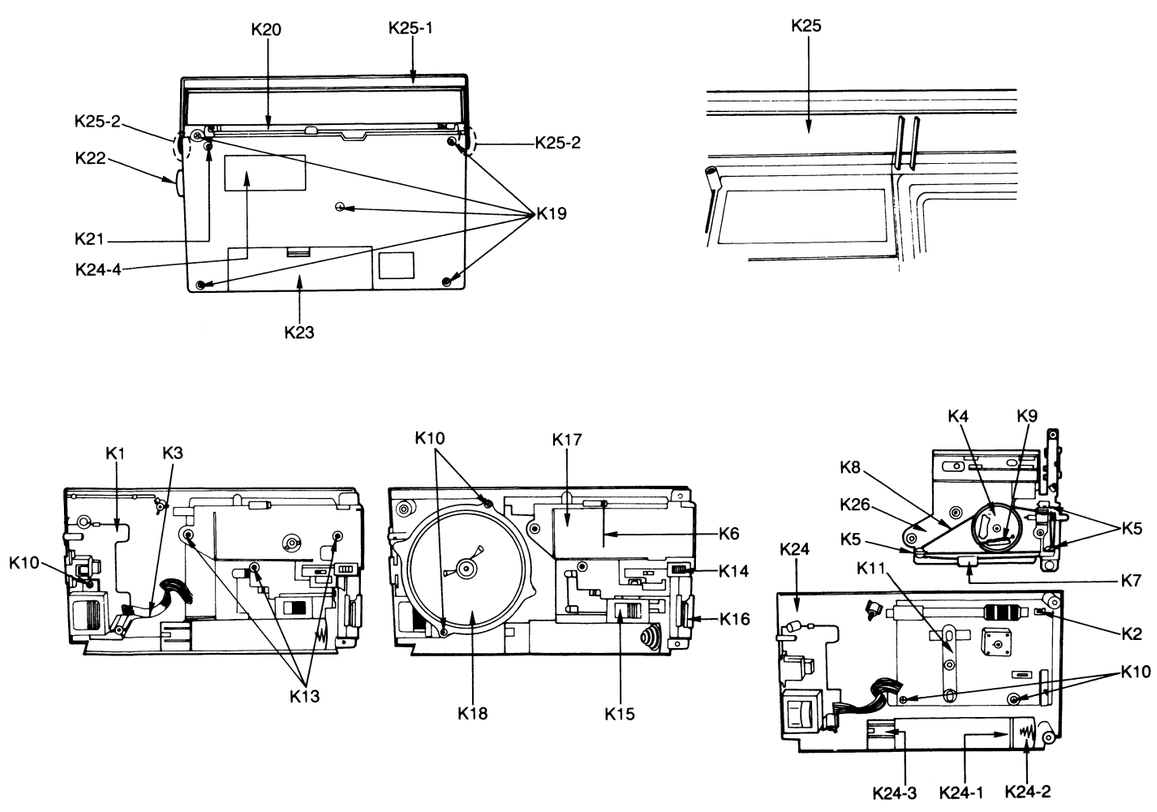
During installation, simultaneously fit in A and A .

Fig. 9

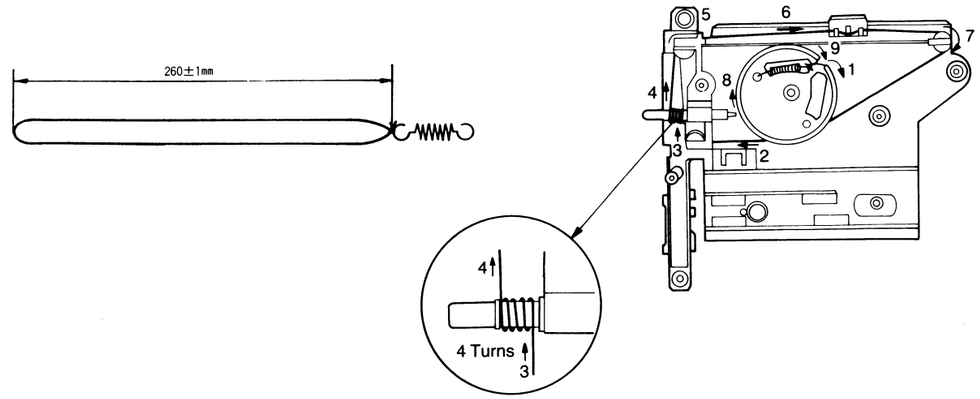
Ref. No.	Shown in Fig. —.	To remove —.	Remove —.
1	1	Front Cabinet	Knob .....(A)×1
2	1		Screw (3×16)mm .....(B)×5
3	2	Speaker	Screw (3×12)mm .....(C)×2
4	2	Dial Chassis (*1)	Turn the tuning shaft until the pointer reaches the left end.
5	2, 3		Remove the dial scale in the direction of the arrow ... (D)×1
6	4		Screw (3×30)mm .....(E)×3
7	5	Band Switch Lever (*2)	Lever .....(F)×1
8	4	Power Supply Circuit Board	Screw (3×12)mm .....(G)×1
9	4		Rib .....(H)×1
10	5	Main Circuit Board	Screw (3×12)mm ..... (I)×2
11	6	Handle	Remove the handle both in the direction of arrow.
12	7	Band Knob	Remove the ribs in the direction of arrows.
13	8	Pointer	Pull out the dial pointer in the direction of arrow ①. ..... (J)×1

*1. If the double-sided tape on the back of the Dial Scale its not adhesive qualities, replace it.
*2. Note that they may be tightly engaged.

CABINET PARTS LOCATION



DIAL THREADING



MEASUREMENTS AND ADJUSTMENTS

■ ALIGNMENT INSTRUCTION

READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

1. Set volume control to maximum.
2. Set loudness switch to OFF.
3. Set tone switch to OFF.
4. Set band switch to MW, SW or FM.
5. Set radio (power) switch to ON.
6. Set power source voltage to 6 V DC.
7. Output of signal generator should be no higher than necessary to obtain an output reading.

■ LW, MW and SW ALIGNMENT

	BAND	SIGNAL GENERATOR or SWEEP GENERATOR CONNECTIONS	SIGNAL GENERATOR or SWEEP GENERATOR FREQUENCY	RADIO DIAL SETTING	INDICATOR (ELECTRONICS VOLTMETER or SCOPE)	ADJUSTMENT	REMARKS
				AM-IF ALIGNMENT			
(1)	MW	Fashion loop of several turns of wire and radiate signal into loop of receiver.	455 kHz 30% Mod. at 400 Hz	Point of non-interference. (on/about 600 kHz)	Output meter across voice coil.	T2 (AM 1st IFT) T3 (AM 2nd IFT)	Adjust for maximum output.
				MW-RF ALIGNMENT			
(2)	MW	〃	511 kHz	Tuning capacitor fully closed.	〃	L8 (MW OSC Coil)	Adjust for maximum output.
(3)	MW	〃	1650 kHz	Tuning capacitor fully open.	〃	CT5 (MW OSC Trimmer)	〃
(4)	MW	〃	550 kHz	Tune to signal.	〃	(*1) L6 (MW ANT Coil)	Adjust for maximum output. Adjust L6 by moving coil bobbin along ferrite core.
(5)	MW	〃	1,500 kHz	〃	〃	CT3 (MW ANT Trimmer)	Adjust for maximum output. Repeat steps (2)~(5).
	(*1) Cement antenna bobbin with wax after completing alignment.						
				SW-RF ALIGNMENT			
(6)	SW	〃	5.75 MHz	Tuning capacitor fully closed.	〃	L9 (SW OSC Coil)	Adjust for maximum output.
(7)	SW	Connect to test point ▼1 through ceramic capacitor (10 pF) Negative side to test point ▼2.	18.8 MHz	Tuning capacitor fully open.	〃	CT6 (SW OSC Trimmer)	〃
(8)	SW		5.9 MHz	Tune to signal.	〃	L7 (SW ANT Coil)	〃
(9)	SW	〃	18 MHz	〃	〃	CT4 (SW ANT Trimmer)	Adjust for maximum output. Repeat steps (6)~(9).

▼ Be sure to fold at the (▼) mark so that mark is on the outside.

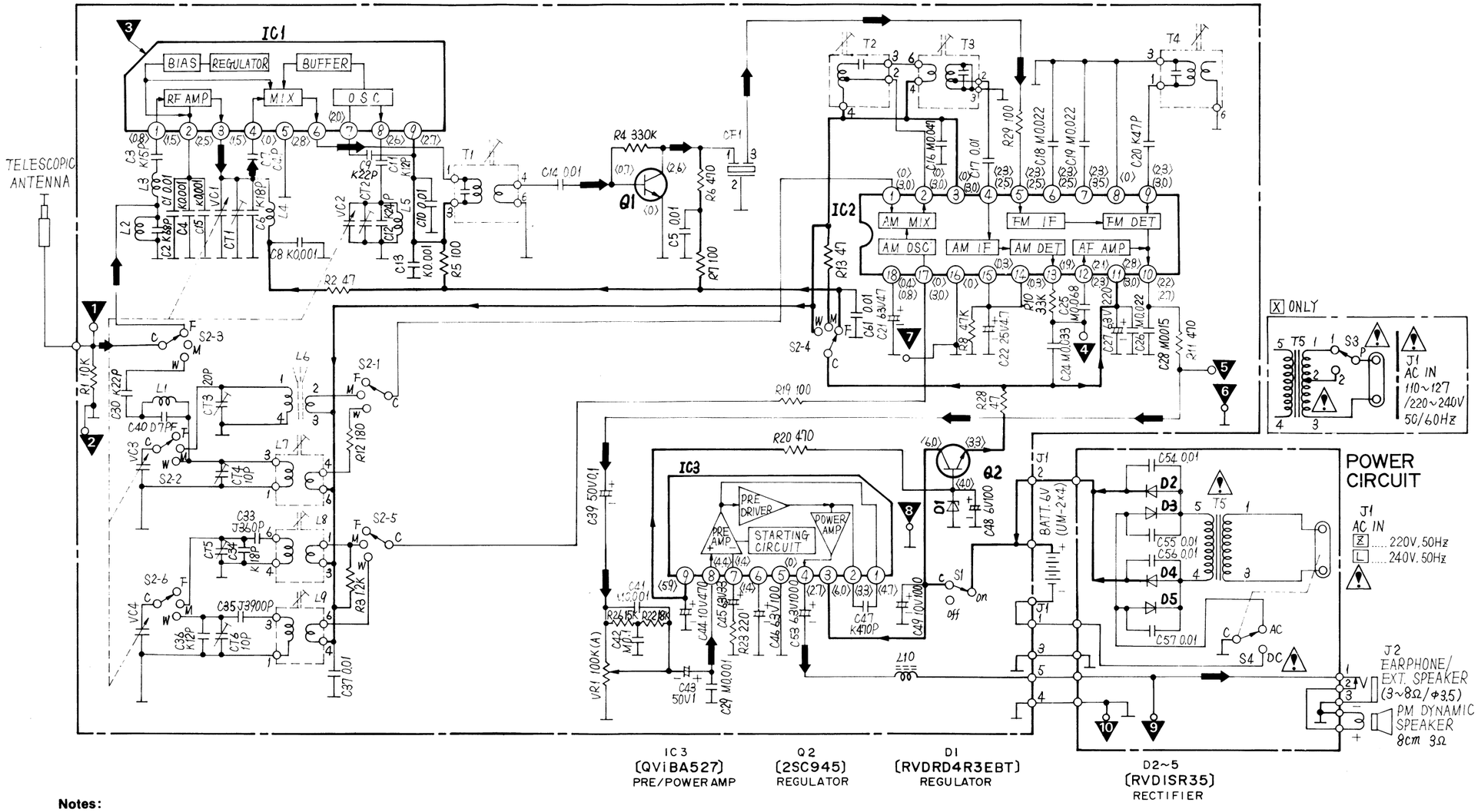
D

SCHEMATIC DIAGRAM

[Z]...For all European areas except United Kingdom, F.R. Germany, France, Italy and Finland
[X]...For Asia, Latin America, Middle East and Africa areas
[L]...For Australia

IC1 (AN7205) FM FRONT END
Q1 (2SC829D) IF AMP
IC2 (AN7220A) FM/AM IF AMP

MAIN CIRCUIT



IC3 [QViBA527] PRE/POWER AMP
Q2 [2SC945] REGULATOR
D1 [RVDRD4R3EBT] REGULATOR
D2~5 [RVDISR35] RECTIFIER

Notes:

1. S1: Radio ON/OFF switch in "ON" position.
2. S2-1~S2-6: Band select switch in "FM" position. (F...FM, M...MW, W...SW)
3. S3: Voltage select switch in "220~240 V" position. ([X] only)
4. S4: AC/DC IN select switch in "AC IN" position.
5. VR1: Volume control.
6. The mark (▼) shows test point e.g. ▼1 = test point 1.
7. DC voltage measurement are taken with electronics voltmeter from negative terminal of battery.
   < >...FM position, ( )...AM position
8. Battery current: No signal ..... 24 mA
   Maximum output (radio) ..... 290 mA
9. Important safety notice
   Components identified by ⚠ mark have special characteristics important for safety.
   When replacing any of these components, use only manufacturer's specified parts.
10. Described in schematic diagram are two types of numbers; the supply parts number and production parts number for transistors and dioes.
    One type number is uded for supply parts number and production parts number which they are identicial.

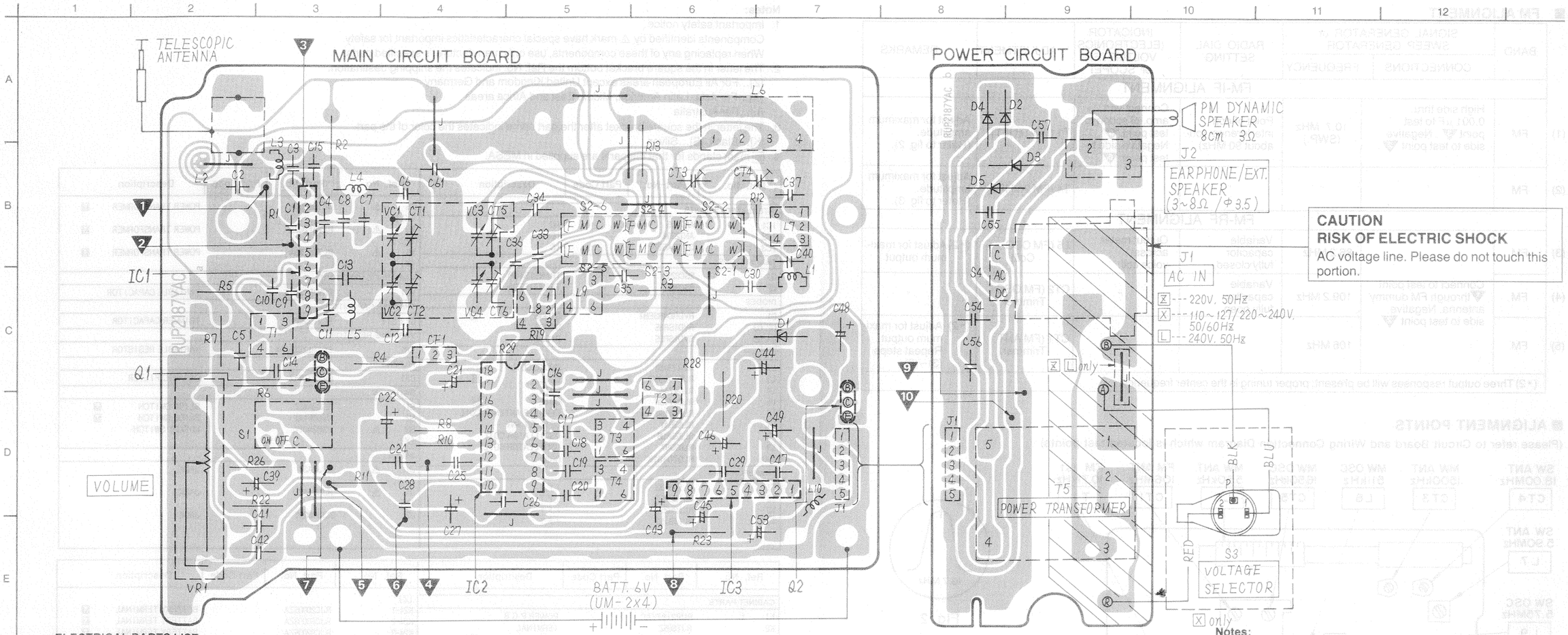
e.g. Q3
2SA564Q ——— Production parts number
[2SA722-S] ——— Supply parts number

* **The supply parts number is described alone in the replacement parts list.**

* **This schematic diagram may be modified at any time with the development of new technology.**

+B Voltage Line
Radio (FM) Signal Line

CIRCUIT BOARDS AND WIRING CONNECTION DIAGRAM



Notes:

- Z ... For All European areas except United Kingdom, F.R. Germany, France, Italy and Finland
- X ... For Asia, Latin America, Middle East and Africa areas
- L ... For Australia

ELECTRICAL PARTS LIST

Numbering System of Resistor

Example:

ERD	25	F	J	101
Type	Wattage	Shape	Tolerance	Value (100Ω)

ERJ	6G	C	J	2R2
Type	Wattage	Shape	Tolerance	Value (2.2Ω)

Resistor Type		Wattage	Tolerance
ERD:	Carbon Resistor	10 : 1/6W	F : ±1%
ERC:	Solid Resistor	25 : 1/4W	G : ±2%
ERF:	Incombustible Box-Shaped Wire-Wound Resistor	50 : 1/2W	J : ±5%
		18 : 1/8W	K : ±10%
		14 : 1/4W	H : ±20%
		12 : 1/2W	
ERG:	Metal Oxide-Film Resistor	1 : 1W	
		2 : 2W	
ERM:	Wire-Wound Resistor	3 : 3W	
		S1 : 1/2W	
ERO:	Superstable Metal Film Resistor	S2 : 1/4W	
		6G : 1/10W	
		8G : 1/8W	
ERX:	Metal-Film Resistor		
RRJ: ERJ:	Chip Resistor		

※ Capacity are in microtarads (μF) unless specified otherwise, P=Pico-farads.
※ Resistance are in ohms (Ω), unless specified otherwise, 1K=1,000Ω, 1M=1,000KΩ

Numbering System of Capacitor

Example:

ECKD	1H	102	Z	F
Type	Voltage	Value (1000pF)	Tolerance	Peculiarity

ECEA	50	M	R47
Type	Voltage	Peculiarity	Value (0.47μF)

Capacitor Type		Voltage	Tolerance
ECCD:	Ceramic Capacitor (Chitacon)	(ECCD, ECKD Type) 1H : 50 V DC 2H : 500V DC	K : ±10% M : ±20% Z : +80% −20%
ECKD:	Ceramic Capacitor (Chitabari)	(ECFD Type) C : 12V DC D : 25V DC	
ECFD:	Semiconductor Ceramic Capacitor	E : 50V DC (ECQ Type)	J : ±5% G : ±2%
ECE□:	Electrolytic Capacitor	05 : 50WV DC 1 : 100WV DC	F : ±1%
ECS□:	Tantalum Fixed Electrolytic Capacitor	(ECE, ECS Type) 0G : 4V 0J : 6.3V	C : ±0.25pF D : ±0.5pF
ECQ□:	Polystyrenc Film Capacitor	1A : 10V 1C : 16V 1E : 25V 1V : 35V	F : ±1pF
ECQS:	Polystyrene Film Capacitor	1H : 50V 1J : 63V 2A : 100V	
ECQS:	Polypropylene Film Capacitor		
ECQV:	T.F Capacitor		
ECU□: RCU□:	Chip Capacitor		
ECBT:	Cylindrical Ceramic Capacitor		

Ref. No.	Part No.	Part Code
CAPACITORS		
C1	ECKT1H103ZFD	
C2	ECCT1H680K	
C3	ECCT1H150K	
C4	ECKT1H102KBD	
C5	ECKT1H103ZFD	
C6	ECCT1H180KC	
C7	ECCT1H040C	
C8	ECKT1H102KBD	
C9	ECCT1H220KC	
C10	ECKT1H103ZFD	
C11	ECCT1H120KC	
C12	ECCD1H240KC	
C13	ECKT1H102KBD	
C14	ECKT1H103ZFD	
C15	ECKT1H102KBD	
C16	ECFV1E473MD	
C17	ECKT1H103ZFD	
C18, C19	ECFT1C223MD	
C20	ECCT1H470K	
C21	ECEA0JU470	
C22	ECEA1EU4R7	
C24	ECFT1C333MD	
C25	ECFT1C683MD	
C26	ECFT1C223MD	
C27	ECEA0JU221	
C28	ECFT1C153MD	
C29	ECKT1H102MD	
C30	ECCT1H220KC	
C33	ECQP2A361JZ	
C34	ECCT1H180KC	
C35	ECQP2A392JZ	
C36	ECCT1H120KC	
C37	ECKT1H103ZFD	
C39	ECEA1HU0R1	
C40	ECCT1H070DC	
C41	ECKT1H102MD	
C42	ECFV1C104MD	
C43	ECEA1HU010	
C44	ECEA1AU471	
C45	ECEA0JU330	
C46	ECEA0JU101B	
C47	ECKD1H471KB	
C48	ECEA0JU101B	
C49	ECEA1CSZ102	
C53	ECEA0JU102	
C54, C55	ECKT1H103ZFD	
C56, C57	ECKT1H103ZFD	
C61	ECKT1H103ZFD	
RESISTORS		
R1	ERD25FJ103	
R2	ERD25TJ470	
R3	ERD25TJ122T	
R4	ERD25TJ334	
R5	ERD25TJ101	
R6	ERD25TJ471	
R7	ERD25TJ101	
R8	ERD25TJ473	
R10	ERD25FJ332	
R11	ERD25TJ471	
R12	ERD25FJ181	
R13	ERD25TJ470	
R19	ERD25TJ101	
R20	ERD25TJ471	
R22	ERD25TJ183	
R23	ERD25TJ221	
R26	ERD25TJ153	
R28	ERD25TJ470	
R29	ERD25TJ101	

■ FM ALIGNMENT

	BAND	SIGNAL GENERATOR or SWEEP GENERATOR		RADIO DIAL SETTING	INDICATOR (ELECTRONICS VOLTMETER or SCOPE)	ADJUSTMENT	REMARKS
		CONNECTIONS	FREQUENCY				
		FM-IF ALIGNMENT					
(1)	FM	High side thru. 0.001 μF to test point ⑤, Negative side to test point ②.	10.7 MHz (SWP.)	Point of non-interference. (on/about 90 MHz)	Connect vert. amp. of scope to test point ⑤. Negative side to test point ⑥.	T1 (FM 1st IFT)	Adjust for maximum amplitude. (Refer to fig. 2).
(2)	FM	〃	〃	〃	〃	T4 (FM 2nd IFT)	Adjust for maximum amplitude. (Refer to fig. 3).
		FM-RF ALIGNMENT					
(3)	FM	Connect to test point ① through FM dummy antenna. Negative side to test point ②.	86.2 MHz	Variable capacitor fully closed.	Output meter across voice coil.	L5 (FM OSC Coil)	(*2) Adjust for maximum output.
(4)	FM		109.2 MHz	Variable capacitor fully open.	〃	CT2 (FM OSC Trimmer)	〃
(5)	FM		106 MHz	〃	〃	CT1 (FM ANT Trimmer)	(*2) Adjust for maximum output. Repeat steps (3)~(6).

(*2) Three output responses will be present; proper tuning is the center frequency.

■ ALIGNMENT POINTS

(Please refer to Circuit Board and Wiring Connection Diagram which is located test points)

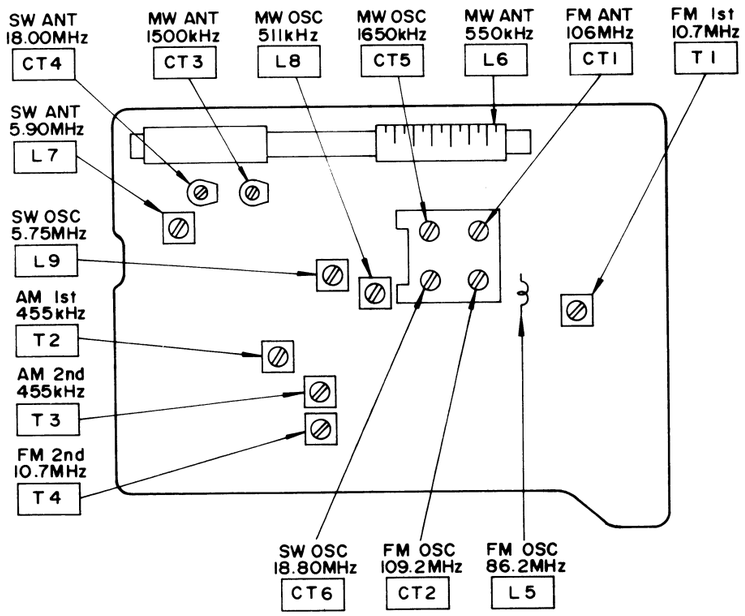


Fig. 1

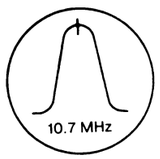


Fig. 2

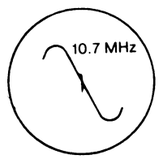


Fig. 3

■ DIAL POINTS (0 Point adjustment)

1. Turn the Variable Capacitor to fully counter-clockwise.
2. Position the pointer over the slot.

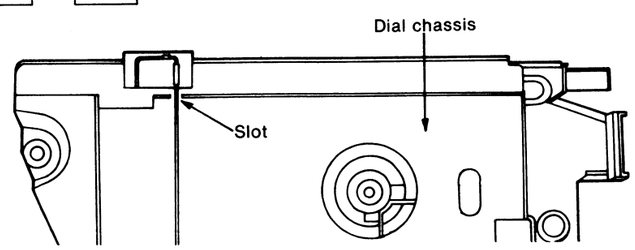


Fig. 4

■ REPLACEMENT PARTS LIST

Notes:

1. Important safety notice
   Components identified by ⚠ mark have special characteristics important for safety.
   When replacing any of these components, use only manufacturer's specified parts.
2. The letter in the square bracket bottom the Ref. No. indicates the shipping destination.
   [Z]...For All European areas except United Kingdom and Germany
   [X]...For Asia, Latin America, Middle East and Africa areas
   [L]...For Australia
3. The letter in the square bracket after the part name indicates the color of the part.
   [K]...Black, [S]...Silver
4. Ⓜ mark stands for that the parts are supplied in MESA.

Ref. No.	Part No.	Part Code	Description
INTEGLATED CIRCUITS			
IC1	AN7205		IC
IC2	AN7220A		IC
IC3	QVIBA527		IC
TRANSISTORS			
Q1	2SC829D		TRANSISTOR
Q2	2SC945		TRANSISTOR
DIODES			
D1	RVDRD4R3EBT		DIODE Ⓜ
D2, D3	RVD1SR35		DIODE
D4, D5	RVD1SR35		DIODE
COILS			
L1	RLQY24S1		CHOKE COIL
L3	RLQY18S3W		COIL Ⓜ
L4	RLD4Y44		COIL
L5	RLD4Y43W		COIL Ⓜ
L6	RLF2W156		FERRITE ANTENNA COIL
L7	RLA3B41		COIL, SW ANT
L8	RL02B10B		OSCILLATOR COIL
L9	RL03B87		OSCILLATOR COIL
L10	RLQZD101K		COIL
TRANSFORMERS			
T1	RL14B153		I.F.T
T2	RL12B207		I.F.T
T3	RL12B217		I.F.T
T4	RL14B153		I.F.T

Ref. No.	Part No.	Part Code	Description
T5 ⚠ (XL)	RLT512E1A		POWER TRANSFORMER Ⓜ
T5 ⚠ (Z)	RLT512G3A		POWER TRANSFORMER Ⓜ
T5 ⚠ (X)	RLT512X3A		POWER TRANSFORMER Ⓜ
VARIABLE CAPACITORS			
VC1	RCV4RC2R1A		VARIABLE CAPACITOR
TRIMMER CAPACITORS			
CT3, CT4	RCVTZ20F		TRIMMER CAPACITOR
VARIABLE RESISTORS			
VR1	EWASL2C95A14		VARIABLE RESISTOR
FILTERS			
CF1	RVF107WAZ		CERAMIC FILTER
SWITCHES			
S1	RSS2A43Z		SLIDE SWITCH Ⓜ
S2	RSS3F14Z		SLIDE SWITCH Ⓜ
S3 ⚠ (X)	RSR2A01Y		ROTARY SWITCH
JACKS			
J1 ⚠ (X,XL)	RJJ1A3Y		JACK
J1 ⚠ (Z)	RJJ1A4ZD		JACK
J2	RJJ1D20Y		JACK

Ref. No.	Part No.	Part Code	Description
CABINET PARTS			
K1 ⚠	RUP2187YAC		POWER P.C.B
K2	RJT865Z		TERMINAL
K3	WBB5CB-9K1K1		CORD Ⓜ
K4	RDD414YC		DRUM Ⓜ
K5	RDR54Z		ROLLER, DIAL Ⓜ
K6	RDP289Z		POINTER [S] Ⓜ
K7	RDA104Z		HOLDER Ⓜ
K8	RZZ0303		DIAL ROPE
K9	RDS4060A		SPRING
K10	XTV3+10G		SCREW
K11	RUB464ZA		LEVER Ⓜ
K13	XTB3+30CFN		TAPPING SCREW
K14	RBD439ZA-0		KNOB [K] Ⓜ
K15	RBD440ZA-0		KNOB [K] Ⓜ
K16	RBD441ZA-0		KNOB [K] Ⓜ
K17 (Z)	RKD713WA-0		SCALE [K] Ⓜ
K17 (X,XL)	RKD713XA-0		SCALE [K] Ⓜ
K18	RAS8P30ZA-D		SPEAKER Ⓜ
K19	XTB3+16CFZ		SCREW
K20	XEARK162EJY		TELESCOPIC ANTENNA Ⓜ
K21	XYN3+F25FN		SCREW Ⓜ
K22	RBN704Z		KNOB [K] Ⓜ
K23	RYNF1630LZKS		BATTERY COVER ASS'Y [K] Ⓜ
K24 (X)	RYFF1630JXKS		REAR CABINET ASS'Y [K] Ⓜ
K24 (XL)	RYFF1630JXLK		REAR CABINET ASS'Y [K] Ⓜ
K24 (Z)	RYFF1630JZKS		REAR CABINET ASS'Y [K] Ⓜ

Ref. No.	Part No.	Part Code	Description
K24-1	RJC20005ZA		BATTERY TERMINAL Ⓜ
K24-2	RJC60008ZA		BATTERY TERMINAL Ⓜ
K24-3	RJC92005ZA		BATTERY TERMINAL Ⓜ
K24-4	RGT1250YA-0		NAME PLATE Ⓜ
K25 (XL)	RYMF1630JXKS		FRONT CABINET ASS'Y [K] Ⓜ
K25 (X,XL)	RYMF1630JZKS		FRONT CABINET ASS'Y [K] Ⓜ
K25 (Z)	RYHF1630LZKS		HANDLE [K] Ⓜ
K25-1	RKX165Z		SPACER
K25-2	RZAF1630LZKS		CHASSIS ASS'Y [K] Ⓜ
K26			
ACCESORIES			
A1 ⚠ (X)	QFC1081		AC CORD
A1 ⚠ (Z)	RJA20Z		AC CORD
A1 ⚠ (XL)	RJA26Z		AC CORD
A2 (Z)	RQX4925ZA		OPERATING INSTRUCTIONS Ⓜ
A2 (X,XL)	RQX4948ZA		INSTRUCTION BOOK Ⓜ
PACKINGS			
P1	RPN9548ZA		PAD COMPLETE Ⓜ
P2 (X,XL)	RPK2464ZA		GIFT BOX Ⓜ
P2 (Z)	RPK2468ZA		GIFT BOX Ⓜ
P3	XZB36X35A04		POLYETHYLENE COVER

MESA H.S ZXL Printed in Japan Ⓕ

ORDER NO. GAD8612078A2

Service Manual

Radio

RF-1630J

(Black)

FM-MW-SW 3 Band Portable Receiver

- Please use this manual together with the service manual for model No. RF-1630J order No. GAD8610065C8.
- This service manual indicates the main differences between; Original RF-1630J (for [Z] mark area) and RF-1630J [G] for F.R. Germany/[I] for Italy.

This is the Service Manual for the following areas.

[G]...For F.R. Germany

[I]...For Italy

■ PARTS COMPARISON TABLE

NOTES: 1. Important safety notice.
Components identified by ⚠ mark have special characteristics important for safety.
When replacing any of these components, use only manufacturer's specified parts.
2. The letter in the circle after the part name indicates the color of the part.
[K]...Black
3. • mark stands for that the parts are supplied from MESA.
4. [G]...For F.R. Germany, [I]...For Italy.

Ref. No.	Description	Part Number		Remarks
		RF-1630J[Z] (Original)	**RF-1630J[G][I]**	
L5	Coil	RLD4Y43W	**RL04N198**	
L12, 13	Coil ⚠	———	**RLQZB470K**	
L14	Coil	———	**RLQZD101K**	
C11	Capacitor (50 V, 39 pF)	ECCT1H120KC	**ECCT1H390KC**	
C12	Capacitor (50 V, 22 pF)	ECCD1H240KC	**ECCT1H220KC**	
C26	Capacitor (16 V, 0.047 µF)	ECFT1C223MD	**ECFT1C473MD**	
C27	Capacitor (6.3 V, 470 µF)	ECEA0JU221	**ECEA0JU471**	
C37	Capacitor (16 V, 0.022 µF)	ECKT1H103ZFD	**ECFT1C223MD**	
R3	Resistor (560Ω)	ERD25TJ122T	**ERD25TJ561**	
R14	Resistor (1.2 kΩ)	———	**ERD25VJ122**	Added
R15	Resistor (1.2 kΩ)	———	**ERD25TJ122T**	Added
•K1	Power P.C.B. ⚠	RUP2187YAC	**RUP2187XAC**	
K8	Dial Rope	RZZ0303	**RDZ05A**	Correction
•K17	Scale [K]	RKD713WA-0	**RKD713VA-0**	
•K24	Rear Cabinet Ass'y [K]	RYFF1630JZKS	**RYFF1630JZGK**	[G] only
			RYFF1630JZIK	[I] only
•K24-4	Name Plate [K]	———	**RGT1250XA-0**	[G] only
			RGT1250WA-0	[I] only

Panasonic

Matsushita Electric Trading Co., Ltd.
P.O. Box 288, Central Osaka, Japan

MEASUREMENTS AND ADJUSTMENTS

■ LW, MW and SW ALIGNMENT

[Z]...For All European areas except United Kingdom & Germany.
[G]...For F.R. Germany.
[I]...For Italy.

	BAND	SIGNAL GENERATOR or SWEEP GENERATOR		RADIO DIAL SETTING	INDICATOR (ELECTRONICS VOLTMETER or SCOPE)	ADJUSTMENT	REMARKS
		CONNECTIONS	FREQUENCY				
	MW-RF ALIGNMENT						
(2)	MW	〃	511 kHz	Tuning capacitor fully closed.	〃	L8 (MW OSC Coil)	Adjust for maximum output.
(3)	MW	〃	1650 kHz	Tuning capacitor fully open.	〃	CT5 (MW OSC Trimmer)	〃
(4)	MW	〃	550 kHz	Tune to signal	〃	(*1) L6 (MW ANT Coil)	Adjust for maximum output. Adjust L6 by moving coil bobbin along ferrite core.
(5)	MW	〃	1500 kHz	〃	〃	CT3 (MW ANT Trimmer)	Adjust for maximum output. Repeat steps (2)~(5).
	(*1) Cement antenna bobbin with wax after completing alignment.						

RF-1630J[Z]

(2)	MW	〃	**516 kHz**	Tuning capacitor fully closed.	〃	L8 (MW OSC Coil)	Adjust for maximum output.
(3)	MW	〃	**1636 kHz**	Tuning capacitor fully open.	〃	CT5 (MW OSC Trimmer)	〃
(4)	MW	〃	550 kHz	Tune to signal.	〃	(*1) L6 (MW ANT Coil)	Adjust for maximum output. Adjust L6 by moving coil bobbin along ferrite core.
(5)	MW	〃	1500 kHz	〃	〃	CT3 (MW ANT Trimmer)	Adjust for maximum output. Repeat steps (2)~(5).
	(*1) Cement antenna bobbin with wax after completing alignment.						

RF-1630J[I] only

■ FM ALIGNMENT

	BAND	SIGNAL GENERATOR or SWEEP GENERATOR		RADIO DIAL SETTING	INDICATOR (ELECTRONICS VOLTMETER or SCOPE)	ADJUSTMENT	REMARKS
		CONNECTIONS	FREQUENCY				
	FM-RF ALIGNMENT						
(3)	FM	Connect to test point ▼1 through FM dummy antenna. Negative side to test point ▼2.	86.2 MHz	Variable capacitor fully closed.	Output meter across voice coil.	L5 (FM OSC Coil)	(*2) Adjust for maximum output.
(4)	FM		109.2 MHz	Variable capacitor fully open.	〃	CT2 (FM OSC Trimmer)	〃
(5)	FM		106 MHz	〃	〃	CT1 (FM ANT Trimmer)	(*2) Adjust for maximum output. Repeat steps (3)~(6).
	(*2) Three output responses will be present; proper tuning is the center frequency.						

RF-1630J[Z]

(3)	FM	Connect to test point ▼1 through FM dummy antenna. Negative side to test point ▼2.	**87,35 MHz**	Variable capacitor fully closed.	Output meter across voice coil.	L5 (FM OSC Coil)	(*2) Adjust for maximum output.
(4)	FM		**108,35 MHz**	Variable capacitor fully open.	〃	CT2 (FM OSC Trimmer	〃
(5)	FM		106 MHz	〃	〃	CT1 (FM ANT Trimmer	(*2) Adjust for maximum output. Repeat steps (3)~(6).
	(*2) Three output responses will be present; proper tuning is the center frequency.						

RF-1630J[G][I]

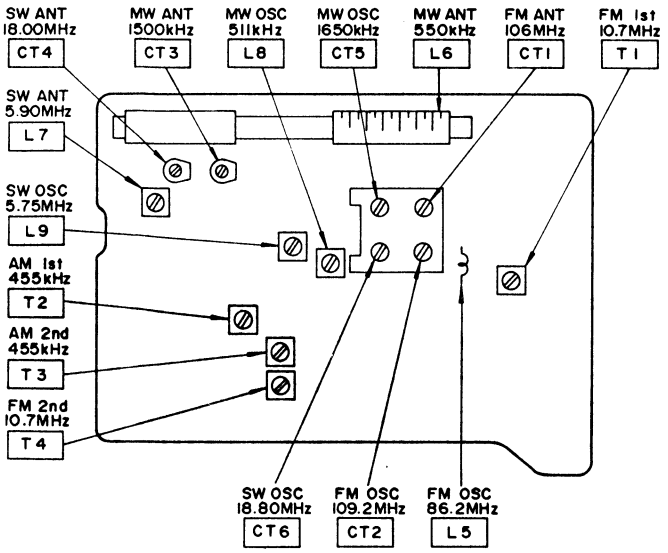
■ ALIGNMENT POINTS

(Please refer to Circuit Board and Wiring Connection Diagram which is located test points.)

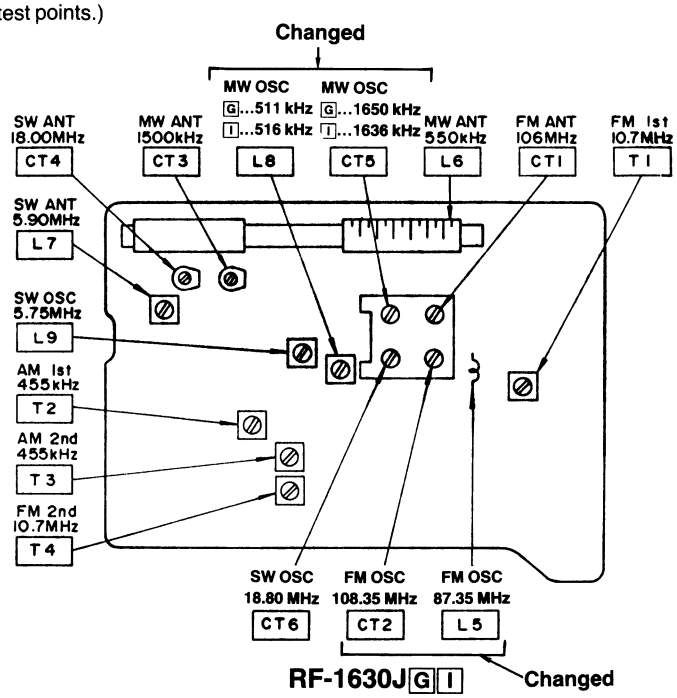
[Z]...For All European areas except United Kingdom & Germany.

[G]...For F.R. Germany.

[I]...For Italy.

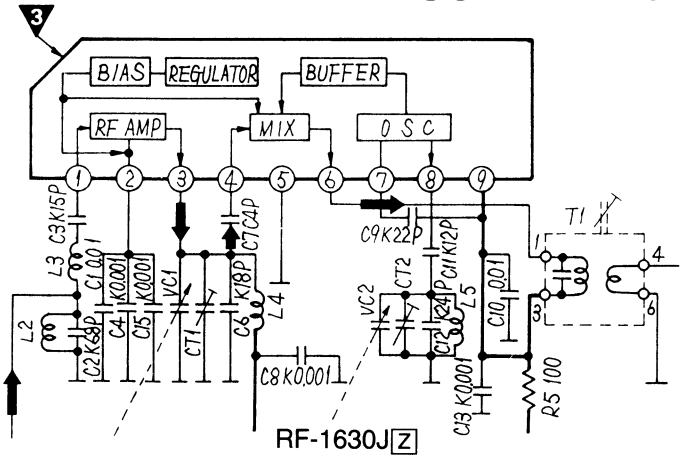


RF-1630J[Z]

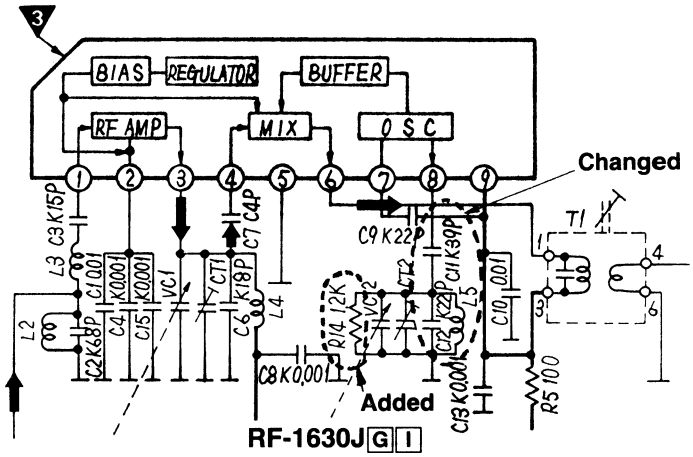


RF-1630J[G][I]

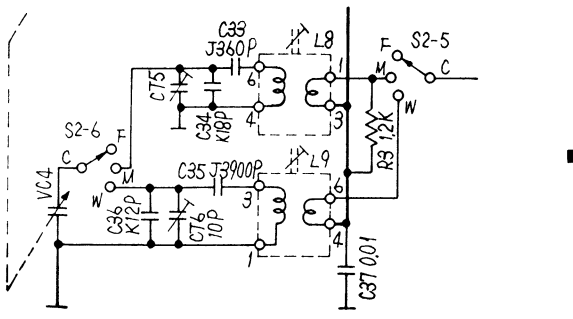
SCHEMATIC DIAGRAM



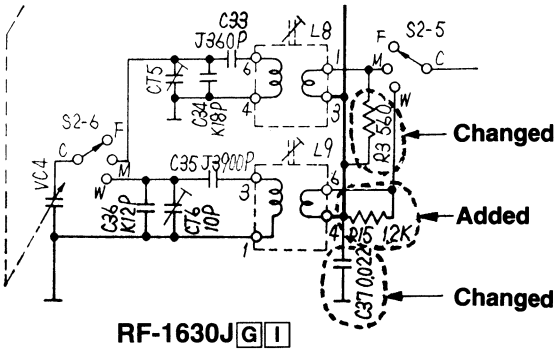
RF-1630J[Z]



RF-1630J[G][I]



RF-1630J[Z]



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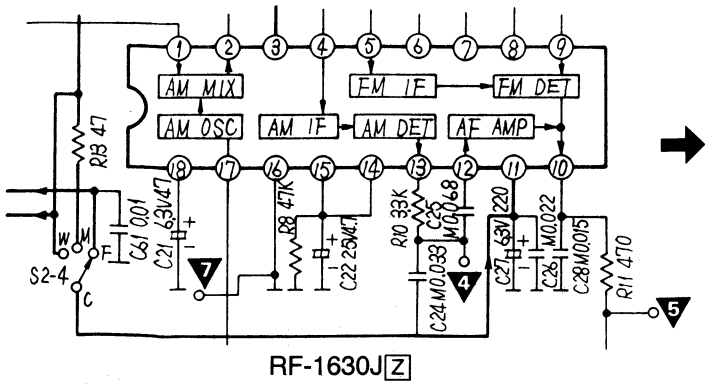
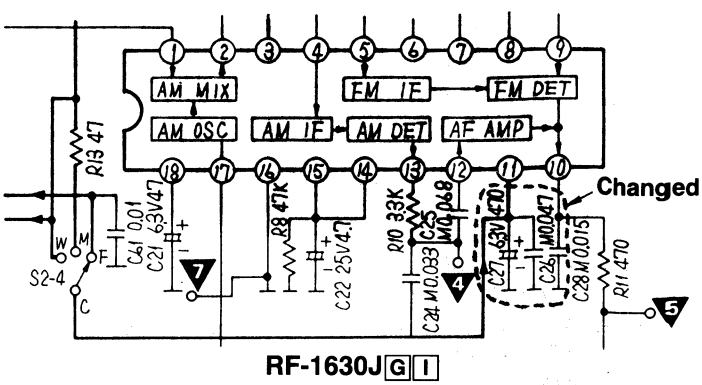
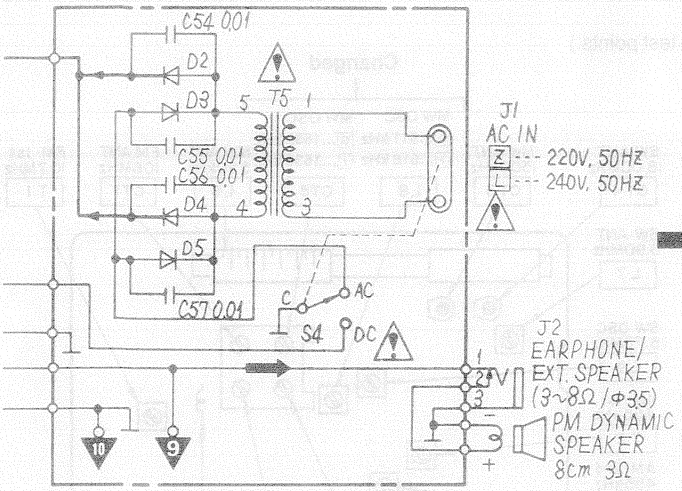


RF-1630J[Z]

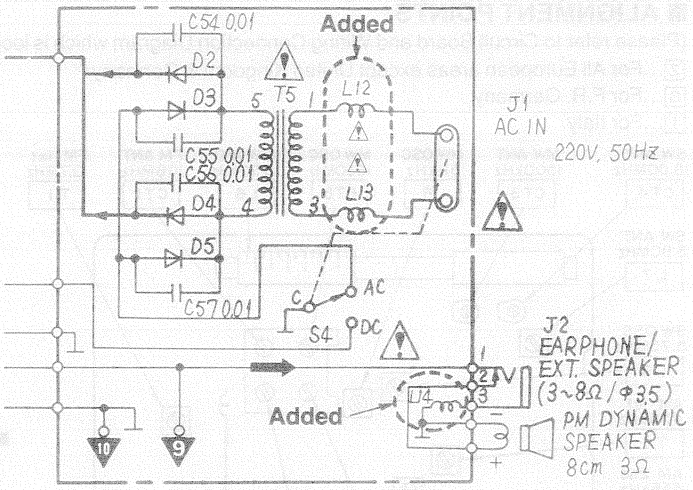


RF-1630J[G][I]

D

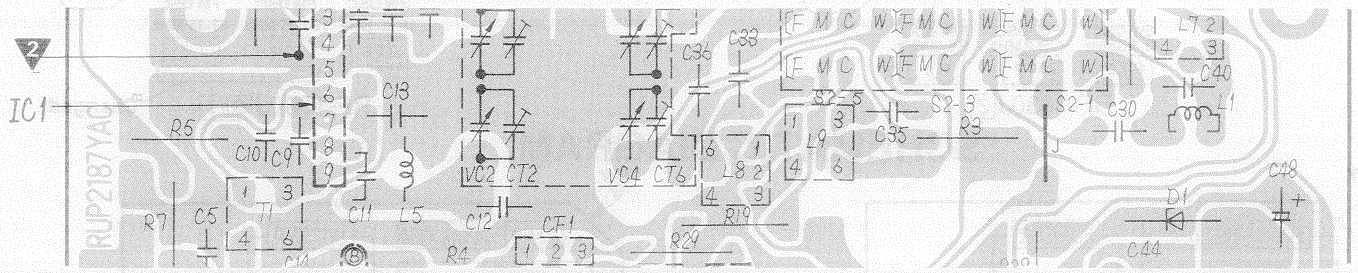


RF-1630J Z

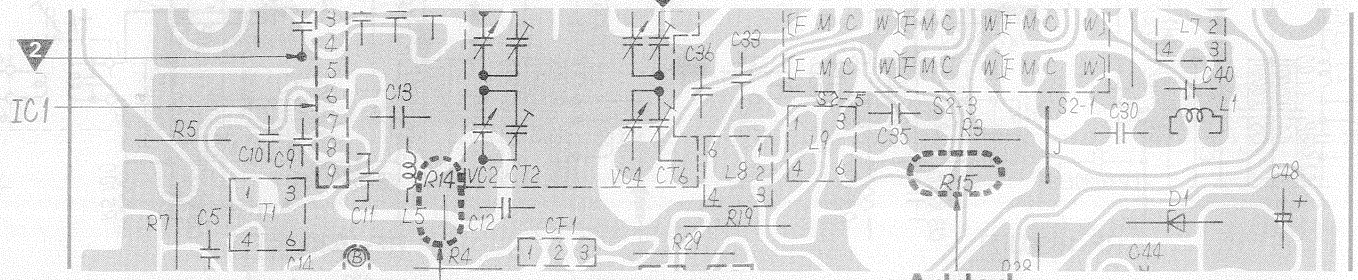


RF-1630J G I

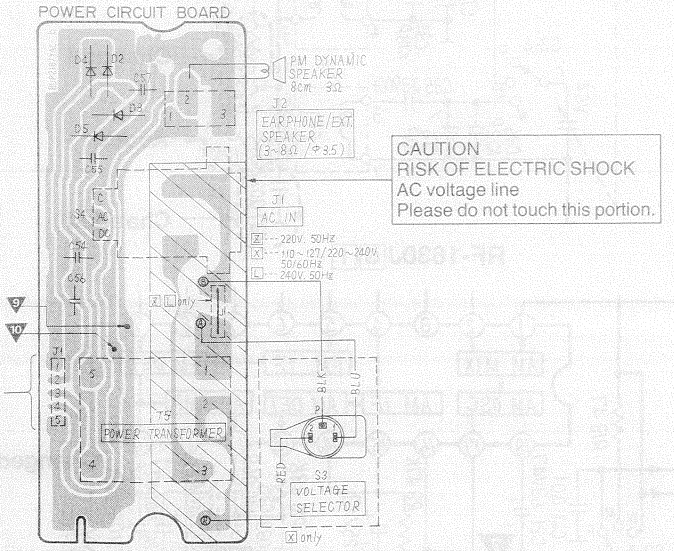
CIRCUIT BOARD AND WIRING CONNECTION DIAGRAM



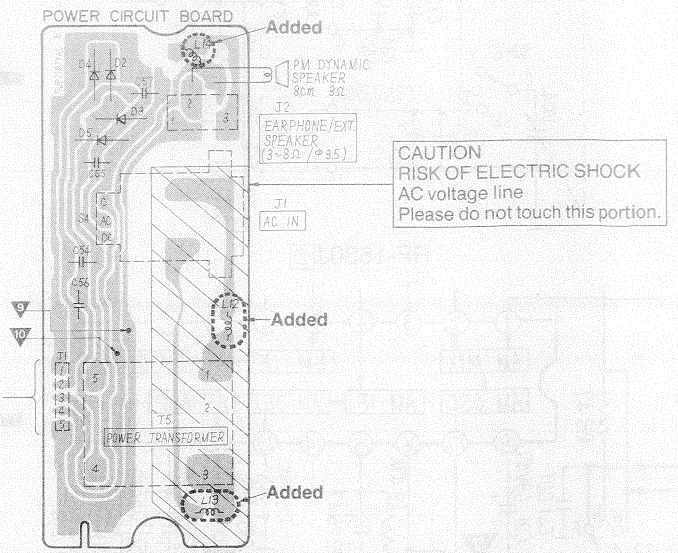
RF-1630J Z



Added RF-1630J G I Added



RF-1630J Z



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G...For F.R. Germany.
I...For Italy.

MESA
H.S/K.K

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